



Berlin Water Works September 2020

Water Commissioners for this report period were Michael Caron, Paul W. Poulin, Sean Brungot, and Paul Ingersoll; Ex-officio member was Mayor Paul R. Grenier.

The Berlin Water Works (BWW) has not increased water rates in twenty-three years. BWW has been able to maintain water rates because of cross-training employees and elimination of work through planned improvements and the implementation of BWW “force account” construction to offset operating cost by performing capital improvement projects with BWW resources. Energy improvements including the Solar System at the BWW office and the Hydro at the Ammonoosuc Treatment Facility have also helped keep energy costs manageable. BWW signed a contract with Freedom Energy Logistics for nineteen months, beginning April 2019, with a fixed rate of \$0.0819/kWh. We have generated extra power with the Hydro at the Ammonoosuc Treatment Plant. We have received an Eversource Credit in the amount of \$2511.21. This is applied to the Eversource Demand Charge the will reduce our net charges for the next year.

We have seven New Hampshire State Revolving Loans remaining (SRL #06-12). The availability of new low interest system improvement loans and grants has enabled the BWW to perform “Force account” construction work to improve our systems and balance the operation and debt budgets.

BWW continues to offer on line bill paying for customers. Approximately 1053 or 30.25% of our customers are registered to use the online billing service and a total of 459 or 13.19% are paperless. Also, the BWW has an auto-pay option for which 253 or 7.27% customers currently participate.

There are 3480 BWW accounts requiring metering and protective devices. BWW has installed 2486 backflow devices to-date at customer’s homes. BWW has installed 1953 radio read units to-date. BWW is currently upgrading old brass meters by replacing them with poly Sensus iperl meters. FY2020 BWW replaced 164 meters, of the total replaced, all were Sensus iperl meters.

Efforts continue to reduce the number of running water customers, and 0 are left. During the winter of 2000/2001, 1003 of 3500 customers were on the running water program. The last running water service has been completed. We also eliminated 150 feet of 2-inch galvanized pipe in the system. This is a huge accomplishment for the Berlin Water Works and the program is now closed.

BWW has built an access road for Berlin Middle High School. BWW, School officials and HEB discussed plans for the road to go around Jasper Street and to continue the access road near the High School gym. BWW box cut the area in between the parking lot near the gym, out to Jasper Street and laid the 8” water main and installed a hydrant. Paving was done from Jasper Street down to the parking lot and we also hydro-seeded the area. The road is located on the back side of the

school which will eventually provide access to the Mini-Mountie Program, and provide hydrants for improved fire protection.

		FISCAL 2020	FISCAL 2019
Total Flow		584,275,989	613,242,670
Difference from previous year		.95%	4.2% decrease
Gallons per Day		1.62 Million Gallons	1.68 Million Gallons
Running Water Customers		0	13
Running Water Start - early		-	January 13, 2019
Running Water Start - regular		-	-
Running Water Finish		-	April 18, 2019
Frozen Water Calls - outside		-	21
Frozen Water Calls - inside		1	14
Hydrant Flushing			
Number of main line breaks		2	
Number of service line breaks		9	

Berlin Water Works continued to pass the lead and copper water sampling compliance regulations set forth by the NHDES for the 10th consecutive round of testing. The State of NH Department of Environmental Services dropped the number of test sites required from 60 sample sites to 30 sample sites, and now to 20 sample sites. The overall average lead and copper sample levels have dropped to new low levels. Please note that the water leaving the Water Treatment Plant is free of lead and copper and that the resulting lead and copper are attributed old portions of the distribution system, customer pipe systems, and/or dead-end lines. Water sampling will continue to monitor lead and copper levels. The next round of testing is scheduled for September 2021.

Water Quality Report for calendar year 2019 was distributed to all water customers as a bill stuffer in the May 2020 Billing. Paperless customers received an internet address to view the Water Quality Report.

Berlin Water Works has been awarded a contract from the US Department of Justice - Federal Bureau of Prisons, Federal Correctional Institution - Berlin for the continuation of Water Utility Services. The superintendent signed the award letter, and this is a formal contract that BWV will provide water services for another ten years. The effective date of the award was May 1, 2020 through April 30, 2030.

Fire hydrants were flow tested during the summer of 2019, and we updated our fire flow rates. This was a summer long task. Each hydrant was tested for fire flow rates, static and residual pressures. They have not been flow tested since 2002. The data showed a significant increase in hydrant flows and residual pressure throughout the city. This will also help with insurance ratings and fire protection.

Vachon Clukay & Company, PC was accepted by the Board to perform the Water Works financial reports for periods FY2018 thru FY2021. Our FY2021 budget of \$2,859,680 was presented by the Board on May 27, 2020 at the budget hearing providing \$2,174,400 for operations and \$ 685,280

for loan debt payments. The proposed budget was approved June 17, 2020. This budget represents the twenty-third consecutive year with no water rate increase for its customers.

IMPROVEMENT PROJECTS:

A \$1,500,000 NHSRL #12 was awarded to BWVW on November 22, 2017. The proposed work is to continue planned water main replacement of vintage 1890 through 1930's unlined 6" and 8" diameter cast iron pipe. The water main replaced will be the highest failure rate water main in the BWVW Distribution System based on our records. Running water Customers have been addressed also by lowering and insulating service lines to prevent freezing. At one time there was over 1,100 running water services, we have now eliminated all early running water customers. Most of the proposed scope streets have stamped design drawings from previously funded projects. BWVW has completed water main work on Twelfth Street from Sweden Street to Nansen Street. BWVW has also completed work on Willard Street between Hillside Ave and School Street and on High Street between Emery Street and Pleasant Street, and on Western Avenue from Gerrish Street down toward Mink Street. BWVW has also begun work on Goebel Street.

Brown Farm Well #2 was completed by Layne Christensen Company, the 10-day pump test was completed and the VFD is installed and the instrumentation is complete. The Water Conservation Plan was approved by the State, this has been a long process but we have been granted waivers. On June 17th, 2019 BWVW received a letter from Kelsey Vaughn, NH Water Conservation Program/Drinking Water & Groundwater Bureau stating that DES approved the exemption request. Also, NHDES approved the meter maintenance schedule proposed by BWVW. The calibration of the Venturi meter will need to be done electronically each year and the cleaning of the meter will need to be inspected in 20 years. BWVW was notified by Andrew Koff that NHDES approved the Large Groundwater Withdrawal Permit; the well connection was approved by Randall Suozzo of NHDES. Brown Farm Well #2 is permitted for withdrawal of 700GPM. Well #1 and #2 are permitted for withdrawal of 1100GPM when both are running simultaneously.

BWVW has paid off the remaining debt to Rural Development in the amount of \$819,116.69. This amount represents the 22 remaining yearly payments to RUD. By doing so this saved BWVW \$222,664.60 in interest fees.

	Total as of FY2020	FY 2020	FY 2019
Curb-to-curb street paving (includes overlay)	12.70 miles	.18	.05 miles
Number of New Meters	3405 total in system	164	216
Number of New hydrants	422 total in system	1 Replaced	1
Number of Replaced services	3405 total in system	10	66
New water main installed – since 1990	30.14 Miles	.14	.10 miles

The BWVW installed 741 feet of water main. Improvements to the water distribution in the City of Berlin continue with planned replacement of small diameter galvanized mains, which were all completed as of June 2019, and 1890 thru 1920's vintage unlined cast iron mains (22,759 feet remaining as of June 2020) with the highest frequency problems corrected first. As the streets for

replacement of water mains are selected for design, improved fire protection flow capabilities are considered. The results of these increased efforts will be a much-improved distribution system.

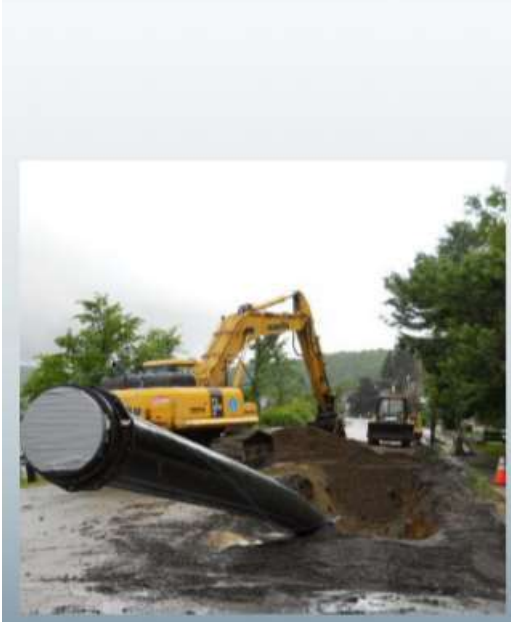
The Berlin Water Works was nominated by the NHDES for the EPA's 2019 AQUARIUS Recognition Program. There is only one municipality selected for each state to participate and the State chose BWW for the program. "The Drinking Water State Revolving Fund is a \$38 billion federal-state partnership dedicated to protecting America's public health. The program finances the construction and rehabilitation of critical drinking water infrastructure, along with public health-focused programs and activities across our nation. The DWSRF-funded projects for exceptional focus on sustainability and protection of public health. These projects are examples of the high level of innovation possible with the DWSRF." Unfortunately, BWW was not selected to receive the DWSRF Aquarius Award however it was recognized at the CIFA (Council of Infrastructure Financing Authorities) conference in Cleveland, as well as an article in the 2019 Project Compendium booklet which features all of the projects that were submitted.

STATE: NEW HAMPSHIRE

RECIPIENT: BERLIN WATER WORKS

PROJECT: WATER MAIN REPLACEMENT

This \$2 million DWSRF project, completed in spring 2018, included the replacement of high-failure cast iron water mains from 1890 to 1935 and installation of hydrants to improve water main flushing. Water service lines were lowered and insulated to prevent freezing during the winter months. Approximately 31,000 feet of water main was replaced throughout 47 City of Berlin streets; looping was also completed, where possible, to eliminate dead ends in the distribution system. These system improvements resolved many public health and safety issues, including the following: significant water loss, chronic water main breaks, discolored water, and reduction in fire flow. This project better allows the City of Berlin to serve its customers, including schools, hospitals, health care facilities, and prisons.



BWW received the NHDES Sanitary Survey 2019 on November 5th, 2019. Their letter states that “The BWW is operated in a professional manner and staff is knowledgeable of the components and operation of the water system. The most recent water quality monitoring records show that the system is currently in compliance with all water quality standards including lead & copper”. The letter also acknowledged positive features that were noted during the survey along with recommendations for improvements or operating adjustments.

On February 5th, 2020, BWW was approved for \$20,000 for the Brown Farm Well fencing and gate pending the completion of the Local Source Water Protection Grant award application. BWW had applied for this grant last year but we were declined. The fence project has been completed and it came out great. The new gate is a nice addition. We have submitted all necessary documentation for the completion of the project to the NHDES and we have received payment disbursement for project completion.

BWW continues to record GIS location information for all new construction as well as completing the city a zone at a time.

Thanks to all BWW employees, Water Works Commissioners, the Honorable Mayor Paul Grenier, the City of Berlin and the NHDES Drinking Water staff for their continued support. The BWW has completed and is continuing work on significant improvements that will improve our water system and reduce our operating cost for many years into the future.

Craig P. Carrigan
Superintendent